


August 1, 2001

MEMORANDUM

TO: Katherine B. Kelly, Administrator
Air Quality Division

FROM: Bill Rogers, Air Quality Engineer
Civil/Environmental Engineering
State Technical Services Office 

THROUGH: Daniel Salgado
Lead Process Engineering
State Technical Services Office

SUBJECT: *Technical Memorandum for Final Tier I Operating Permit (#017-00037)*
P#9505-051-1, PG&E Gas Transmission – Northwest Compressor Station #4, Samuels, Idaho

PERMITTEE:	PG&E Gas Transmission - Northwest P.O. Box 3100 Spokane, WA 99212
PERMIT NO:	017-00037
STANDARD INDUSTRIAL CLASSIFICATION (SIC):	4922
DESCRIPTION:	Gas Production and Distribution
KIND OF PRODUCTS:	Natural Gas Pipeline Compressor Station
RESPONSIBLE OFFICIAL:	Robert T. Howard, Vice President and General Manager
PERSON TO CONTACT:	Jeff Pollock, Field Environmental Engineer
TELEPHONE NO:	(509) 533 - 2834
# OF FULL-TIME EMPLOYEES:	18
AREA OF OPERATION:	42.21 acres
FACILITY CLASSIFICATION:	A
COUNTY:	Bonner
AIR QUALITY CONTROL REGION:	063
UTM COORDINATES:	538.0, 5364.5
EXACT PLANT LOCATION:	237 Samuels Road, Samuels, Idaho

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LIST OF ACRONYMS

ACFM	Actual Cubic Feet per Minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DEQ	Department of Environmental Quality
dscf	Dry Standard Cubic Feet
EF	Emission Factor
EPA	United States Environmental Protection Agency
ft ³ /hr	Cubic Feet per Hour
gpm	Gallons per Minute
gr	Grain
HAPs	Hazardous Air Pollutants
hp	Horsepower
IDAPA	Idaho Administrative Procedures Act
km	Kilometer
lb/hr	Pound per Hour
MACT	Maximum Achievable Control Technology
g	Micrograms
m	Micrometers
MMBTU	Million British Thermal Unit
MMft ³	Million Cubic Feet
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
NSPS	New Source Performance Standards
O ₃	Ozone
OAQ	Office of Air Quality
OP	Operating Permit
PM	Particulate Matter
PM ₁₀	Particulate Matter with an Aerodynamic Diameter of 10 Micrometer (m) or Less
ppm	Parts per Million
PSD	Prevention of Significant Deterioration
PTC.....	Permit to Construct
RMP	Risk Management Plan
SCC	Source Classification Code
scf	Standard Cubic Foot
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
TSP	Total Suspended Particulates
T/yr	Tons per Year (1 Ton = 2000 lb)
VE	Visible Emissions
VOC	Volatile Organic Compound

1. PURPOSE

The purpose of this memorandum is to set out the legal and factual basis for this final Tier I Operating Permit (OP) in accordance with IDAPA 58.01.01.362, *Rules for the Control of Air Pollution in Idaho (Rules)*.

Idaho Department of Environmental Quality (DEQ) staff have reviewed the information provided by PG&E Gas Transmission - Northwest (PG&E GT-NW) regarding the operation of their facility located near Samuels, Idaho. This information was submitted based on the requirements of the Tier I OP in accordance with IDAPA 58.01.01.300.

Based on the information submitted, DEQ has crafted a final Tier I OP for PG&E GT-NW. The permit was submitted for public comment from December 27, 2000 through January 29, 2001. The final permit was forwarded to the United States Environmental Protection Agency (EPA) for their review in accordance with IDAPA 58.01.01.366 from March 1, 2001 through April 15, 2001. Only PG&E GT-NW provided comments during the public comment period. The comments and DEQ's response is presented as Appendix A of this document. EPA raised no objections.

2. SUMMARY OF EVENTS

On August 31, 1998, the Idaho Department of Environmental Quality (DEQ) received a Title V Major Facility (Tier I) Operating Permit application from PG&E Gas Transmission - Northwest for a natural gas compressor station located near Samuels, Idaho. The application was determined complete on October 30, 1998. On December 27, 2000, a draft permit was made available for public comment. The public comment period ended on January 29, 2001. A proposed permit was sent to EPA on March 1, 2001 for their 45-day review. EPA's review ended on April 15, 2001.

3. BASIS OF THE ANALYSIS

The following documents were relied upon in preparing this memorandum and the Tier I OP:

- a. Tier I Air Operating Permit Application (May 5, 1995; PG&E GT-NW (formerly Pacific Gas Transmission (PGT); Samuels, Idaho);
- b. Tier I Air Operating Permit Application Addendum (July 26, 1995; PG&E GT-NW; Samuels, Idaho);
- c. Permit to Construct Modification Application (February 1, 1999; PG&E GT-NW; Samuels, Idaho);
- d. Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, January 1995, Office of Air Quality Planning and Standards, United States Environmental Protection Agency;
- e. 40 CFR Part 70;
- f. Guidance developed by EPA and DEQ;
- g. Title V permits issued by other jurisdictions; and

Documents and procedures developed in the Title V Pilot Operating Permit program.

4. REGULATORY ANALYSIS - GENERAL FACILITY

4.1 Facility Description

4.1.1 General Process Description

PG&E GT-NW operates a network of compressor stations that transmit natural gas from Canada to California along an underground pipeline system. The pipeline enters the United States in northern Idaho, continues through southeastern Washington and central Oregon, and enters California at its northern border. The network consists of 12 compressor stations located along the pipeline, all of which are designed for remote unattended operation from PG&E GT-NW's Gas Dispatch Center in Portland, OR. Each compressor station consists of one or more turbine-driven compressors that move the natural gas through the pipeline. The turbines use the natural gas in the pipeline as fuel and provide energy for the compressors to induce the flow of the gas.

Currently, the Samuels compressor station, or Compressor Station #4, uses two turbines to power the compressors. The turbines are referenced as Unit 4B and Unit 4C. Unit 4B is a Solar Mars 100S Low NO_x turbine with a maximum rated output capacity of 15,000 hp (ISO). Unit 4C is a Solar Mars T14000 standard turbine with a maximum rated output capacity of 14,100 hp (ISO). Each turbine has its own stack through which combustion products are exhausted to the atmosphere. Stack parameters for each turbine are listed in Section 5.1.1 of this document.

Emissions from this facility are primarily the result of natural gas combustion in the turbines. The facility's potential to emit (PTE) is limited by PTC #017-00037, which imposes operational limitations on the amount of fuel each turbine can combust. CO and NO_x are the regulated criteria air pollutants for which this facility is a Title V Major Facility (IDAPA 58.01.01.008.10.c). The remaining criteria air pollutants are not significant (IDAPA 58.01.01.006.92). Table 1 summarizes the facility's PTE. The emission factors used to estimate the PTE are referenced.

TABLE 1.

POTENTIAL TURBINE EMISSIONS FROM COMPRESSOR STATION				
PM ₁₀	4.1	3.6	7.7	EPA's AP-42
CO	51.0	59.4	110.4	Manufacturer's data at full-load operating conditions
VOC	1.8	1.1	2.9	Manufacturer's data at full-load operating conditions
NO _x	73.0	352.0	425.0	Source test and manufacturer's data at full-load operating conditions
SO ₂	1.6	1.4	3.0	Based on a conservative 1 grain/scf estimate

Hazardous air pollutants (HAPs) are also emitted when natural gas is combusted. The potential to emit Haps is inherently limited by the operational limit imposed by PTC #017-00037 on the amount of fuel combusted in the turbines. Based on that limitation, this facility does not emit or have the potential to emit 10 T/yr of any single HAP, nor does it emit or have the potential to emit 25 T/yr of any combination of HAPs. Because this facility does not meet or exceed these threshold levels, it is not a Title V Major Facility for HAPs (IDAPA 58.01.01.008.10.a.i and .ii), and therefore, is not subject to Title V operating permit requirements for HAP emissions. Table 2 summarizes the potential HAP emissions from this facility.

TABLE 2.

POTENTIAL TURBINE HAP EMISSIONS FROM COMPRESSOR STATION #4				
HAZARDOUS AIR POLLUTANT	UNIT 4B <i>T/yr</i>	UNIT 4C <i>T/yr</i>	TOTAL EMISSIONS UNIT 4B + UNIT 4C <i>T/yr</i>	EMISSION FACTOR <i>lb/MMscf</i>
Benzene	4.38E-03	3.81E-03	8.19E-03	0.0079 (2)
Formaldehyde	1.05	0.91	1.96	1.8941 (2)
Toluene	4.03E-02	3.50E-02	7.53E-02	0.0726 (1)
Xylene	1.60E-02	1.40E-02	3.00E-02	0.0289 (1)
Acetaldehyde	2.05E-02	1.79E-02	3.84E-02	0.0370 (1)
TOTAL HAP EMISSIONS	1.13	0.98	2.11	

- (1) AB2588 Combustion Emission Factors, Ventura County Air Pollution Control District
(2) Source Testing

In addition to the turbines, this facility includes two boilers and an emergency electrical generator. The boilers are used for space heating and the emergency generator is used to provide backup electrical power in the event that electrical power from the local utility company is interrupted. As with the turbines, the boilers and emergency generator use natural gas from the pipeline as fuel.

4.1.2 Facility Classification

This facility is a major facility as defined in IDAPA 58.01.01.008.10.c, but it is not a designated facility as defined in IDAPA 58.01.01.006.27. This facility is subject to federal New Source Performance Standards (NSPS) in accordance with 40 CFR Part 60, Subpart GG (Standards of Performance for Stationary Gas Turbines), but it is not subject to National Emission Standards for Hazardous Air Pollutants in accordance with 40 CFR Part 61, or to National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT) in accordance with 40 CFR Part 63. The Standard Industrial Code (SIC) defining the facility is 4922 (Gas Production and Distribution - Natural Gas Transmission) and the facility classification is A.

4.1.3 Area Classification

Compressor Station #4 is located 12 miles north of Samuels, Idaho, in Bonner County. Bonner County is located in AQCR 63 and Zone 11. Although Samuels and surrounding area is considered nonattainment for PM₁₀ emissions, this facility lies outside the PM₁₀ nonattainment area. Consequently, this facility is located in an area designated as attainment or unclassifiable for all regulated criteria air pollutants. There are no Class I areas within 10 kilometers (km) of the facility.

4.1.4 Permitting History

10/1/86 PG&E GT-NW, then known as PGT, was issued a Permit to Construct (PTC #0280-0007) for a natural gas compressor station located near Samuels, ID;

12/22/89 The permit was modified;

2/20/90 The permit was modified;

5/29/90 The permit was amended;

3/22/96 The permit was modified, and the permit number was changed to PTC #017-00037;

11/21/96 The permit was modified;

3/20/98 The permit was modified; and

10/22/99 The permit was modified and contains the currently effective enforceable permit conditions.

4.2 Facility-wide Applicable Requirements

4.2.1 Fugitive Dust Emissions - [IDAPA 58.01.01.650-651]

4.2.1.1 Requirement

In accordance with IDAPA 58.01.01.650-651, the permittee is required to reasonably control all fugitive dust emitting sources to prevent particulate matter from becoming airborne.

4.2.1.2 Compliance Demonstration

To assure that fugitive dust emissions are reasonably controlled, the permittee is required to: (1) monitor and record the frequency and the method(s) used to reasonably control fugitive dust emissions; (2) maintain records of all fugitive dust complaints; and (3) conduct quarterly, facility-wide inspections of all fugitive emissions sources.

For each complaint, the permittee is responsible to assess its validity and to take any corrective action necessary to control the fugitive dust emissions. If numerous complaints are logged, the quarterly monitoring schedule can be adjusted when the permit is reissued at the end of its five-year life. Quarterly is the longest time period allowed by EPA for the purposes of monitoring.

For each facility-wide inspection, the permittee is required to assess the conditions existing at the time fugitive emissions are present (if observed) and any corrective action taken in response to the fugitive emissions. This information is required to be recorded. Monitoring on a frequency shorter than quarterly is not required or recommended, because the access road to the facility is paved and the roadways within the facility boundary are covered with gravel. It is anticipated that fugitive emissions will not be problematic.

4.2.2 Control of Odors - [IDAPA 58.01.01.775-776]

4.2.2.1 Requirement

IDAPA 58.01.01.776 states that: "No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids to the atmosphere in such quantities as to cause air pollution." This condition is currently considered federally enforceable until such time it is removed from the SIP, at which time it will be a state-only enforceable requirement.

4.2.2.2 Compliance Demonstration

The permittee is required to maintain records of all odor complaints received. If the complaint has merit, the permittee is required to take appropriate corrective action as expeditiously as practicable. Each record is to contain: the date that a complaint was received and a description of the complaint; the permittee's assessment of the validity of the complaint; any corrective action taken; and the date the corrective action was taken.

In general, "expeditiously as practicable" is interpreted to mean taking corrective action within 24 hours of receiving a valid odor complaint. However, it is understood that depending on the circumstances, a time period longer than 24 hours may be necessary.

4.2.3 Visible Emissions - [IDAPA 58.01.01.625]

4.2.3.1 Requirement

IDAPA 58.01.01.625 states that "(No) person shall discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than 20% opacity as determined . . ." by IDAPA 58.01.01.625. This provision does not apply when the presence of uncombined water, nitrogen oxides, and/or chlorine gas are the only reason(s) for the failure of the emission to comply with the requirements of this rule.

4.2.3.2 Compliance Demonstration

Compliance with IDAPA 58.01.01.625 is demonstrated through the exclusive use of natural gas at this facility. Historical source test data indicates that natural gas-fired combustion sources, including natural gas-fired turbines, exhibit no visible emissions. For this reason, it is recommended that quarterly visible emissions inspections of this facility be conducted by the permittee to demonstrate compliance with IDAPA 58.01.01.625. Monitoring on a more frequent basis is not recommended or required by the OP.

In the event, however, visible emissions exceed the standard, the permittee must take appropriate corrective action as expeditiously as practicable. Moreover, the permittee must report the exceedance in accordance with the excess emissions rules in IDAPA 58.01.01.130-136 and also report the exceedance in the facility's annual compliance certification. The quarterly monitoring schedule will be adjusted upon permit renewal if monitoring shows noncompliance with IDAPA 58.01.01.625.

In general, "expeditiously as practicable" is interpreted to mean taking corrective action within 24 hours of receiving a valid odor complaint. However, it is understood that depending on the circumstances, a time period longer than 24 hours may be necessary.

For each quarterly inspection, the permittee is required to maintain the following: (1) records of the results of each visible emissions inspection which must include the date of each inspection; (2) a description of the permittee's assessment of the conditions existing at the time visible emissions are present; (3) any corrective action taken in response to the visible emissions; and (4) the date corrective action was taken.

4.2.4 Startup, Shutdown, Scheduled Maintenance, Safety Measures, Upset and Breakdown - IDAPA 58.01.01.130-136

4.2.4.1 Requirement

The permittee must comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, upset and breakdowns.

4.2.4.2 Compliance Demonstration

The methods and procedures for demonstrating compliance are contained within the text of the permit. No further clarification is necessary in this document.

4.2.5 Reporting

4.2.5.1 Requirements

Pursuant to IDAPA 58.01.01.322.08, the permittee is required to conduct sufficient reporting to assure compliance with all the terms and conditions of the Tier I OP. Submittal of such reports for any required monitoring is required at least every six months beginning six months after issuance of the Tier I OP and every six months thereafter. All reports must be certified in accordance with IDAPA 58.01.01.123.

Permit deviations including, but not limited to, excess emissions must be reported promptly by the permittee. If the deviation is an excess emission, the report must be submitted in accordance with the requirements of Sections 130-136. For all other deviations, the permittee is required to submit reports at least every six

months. All instances of deviations from Tier I OP requirements which include monitoring, recordkeeping, and reporting must be clearly identified. The report must describe the probable cause of such deviations and any corrective actions or preventative measures taken. All reports are required to be certified in accordance with IDAPA 58.01.01.123.

4.2.5.2 Compliance Demonstration

The methods and procedures for compliance demonstration are contained within the text of the Facility-wide Conditions. No further clarification is necessary here.

4.2.6 Recordkeeping

4.2.6.1 Requirements

The permittee is required to maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.07.a and b. In addition, the permittee shall retain records of all monitoring and other requirements in the Tier I OP for the most recent five-year period. These records shall be made available to DEQ representatives upon request.

4.2.6.2 Compliance Demonstration

The methods and procedures for compliance demonstration are contained within the text of the Facility-wide Conditions. No further clarification is necessary here.

4.2.7 Chemical Accident Prevention Provisions - 40 CFR Part 68

4.2.7.1 Requirement

Any facility that has more than a threshold quantity of a regulated substance in a process, as determined under 40 CFR 68.115 must comply with the requirements of the Chemical Accident Prevention Provisions at 40 CFR Part 68 no later than the latest of the following dates:

Three years after the date on which a regulated substance present above a threshold quantity is first listed under 40 CFR 68.130; or

The date on which a regulated substance is first present above a threshold quantity in a process.

This facility is not currently subject to the requirements of 40 CFR Part 68. However, should the facility ever become subject to the requirements of 40 CFR Part 68 then it must comply with the provisions contained in 40 CFR Part 68 by the time listed above.

4.2.7.2 Compliance Demonstration

The methods and procedures for compliance demonstration are contained within the text of the Facility-wide Conditions. No further clarification is necessary here.

4.2.8 Testing

4.2.8.1 Requirement

Performance testing is required by the permit. All testing must follow the requirements set forth in the Facility-wide Conditions.

4.2.8.2 Compliance Demonstration

The methods and procedures for compliance demonstration are contained within the text of the Facility-wide Conditions. No further clarification is necessary here.

4.2.9 NSPS Subpart A Applicability

4.2.9.1 Requirement

This facility is subject to 40 CFR Part 60, Subpart GG. In addition to the applicable performance standards mandated by Subpart GG, the facility must also comply with applicable sections of 40 CFR Part 60, Subpart A (NSPS General Provisions). Upon review of Subpart A, it was determined that the following sections apply to this facility:

60.4	Address;
60.7	Notification and Recordkeeping;
60.8	Performance Tests;
60.11	Standards and Maintenance;
60.12	Circumvention;
60.14	Modification; and
60.15	Reconstruction.

4.2.9.2 Compliance Demonstration

Each section is explicit concerning fulfillment of the requirements. Subsequently, no further clarification is necessary here.

4.2.9.3 Non-Applicable Requirements

Sections 60.1, 2, 3, 5, 6, 9, 10, 13, 16, 17, and 19 do not need to be included in the Title V permit, as they are for informational purposes only. However, the applicability of the remaining sections and subsections had to be determined.

60.7(a)(1-3, 6) - notification of initial startup of a facility. The permittee provided notification to EPA of the initial startup of this facility. This requirement has been fulfilled.

60.7(a)(7) - continuous opacity monitoring system. This facility is not required to use a continuous opacity monitoring system; therefore, the requirement does not apply.

60.7(c), (d), (e), and (f) - continuous monitoring system. This facility is not required to use a continuous opacity monitoring system; therefore, the requirement does not apply.

60.7(g) and (h) - notification required by another state or regulatory agency, and clarification or inapplicability of certain provisions of Part 60. Not to be considered generally applicable permit conditions.

60.8(a) - initial performance testing. The permittee has satisfied this requirement.

60.11(e) - initial compliance determination. The permittee has satisfied this requirement.

60.13 - monitoring. Continuous emissions and monitoring systems are not required to be installed; consequently, this section does not apply.

60.18 - general control device requirements. Subpart GG does not reference Section 60.18; therefore, it does not apply to the affected facilities.

60.19 - general notification and reporting requirements. Section provides guidance for notification and reporting requirements.

4.3 Alternative Operating Scenarios

The permittee may install, maintain, and operate one or more replacement turbines (or turbine parts) at this facility; however, emissions, throughput, and rated horsepower must be consistent with existing units.

Replacement turbines must undergo an initial performance test to measure NO_x emissions in accordance with the test measures and procedures specified in 40 CFR 60.8, 40 CFR 60.335, and IDAPA 58.01.01.157.

The permittee must notify DEQ of each turbine replacement at least 30 days before the change-out, or in emergency situations, within 48 hours after the change-out has occurred. The notification must include a statement as to whether the unit being installed has been or will be reconstructed, as defined in 40 CFR 60.15.

4.4 Trading Scenarios

There were no trading scenarios requested by the facility.

4.5 Excess Emissions

PG&E GT-NW is required to follow the procedures in IDAPA 58.01.01.130-136 for excess emissions.

5. REGULATORY ANALYSIS - EMISSIONS UNITS

5.1 Solar Turbines

5.1.1 Emission Unit Description

The natural gas compressors at Compressor Station #4 are powered by Solar Mars turbines that use natural gas from the pipeline as fuel. As the natural gas is combusted in the turbines, PM₁₀, SO₂, CO, NO_x, VOCs, and HAPs are emitted. The facility's PTE is summarized in Tables 1 and 2 of this document. The stack parameters, heat input rates, and output capacities for the turbines currently in use are listed below:

Unit 4B - Solar Mars 100S Low NO_x Turbine

Stack Height:	35 feet
Stack Flow Rate:	200,000 ACFM
Stack Temperature:	911°F (average)
Heat Input Rate:	103 MMBtu/hr (maximum)
Output Capacity:	15,000 hp (ISO) (maximum)

Unit 4C - Solar Mars T14000 Standard Turbine

Stack Height:	40 feet
Stack Diameter:	8.5 feet
Stack Flow Rate:	182,000 ACFM
Stack Temperature:	935°F (average)
Heat Input Rate:	98 MMBtu/hr (maximum)
Output Capacity:	14,100 hp (ISO) (maximum)

5.1.2 Permit Requirement - VISIBLE EMISSIONS - [IDAPA 58.01.01.625][PTC #017-00037]

5.1.2.1 Applicability

Unit 4B and Unit 4C are subject to the visible emissions standard in accordance with IDAPA 58.01.01.625.

For any alternative operating scenario, the replacement turbine is subject to the visible emissions standard.

5.1.2.2 Compliance Demonstration Method

Compliance with the visible emissions standard will be demonstrated by: requiring the exclusive use of natural gas in the turbines; requiring the permittee to monitor and record the amount of natural gas combusted in the turbines; and requiring quarterly facility-wide visible emissions inspections. Performance testing for visible

emissions is not required by the OP because historical source test data shows that there are no visible emissions from these emissions units. It is anticipated that the parametric monitoring is sufficient for compliance demonstration purposes.

5.1.2.3 Monitoring

The permittee is required to monitor the natural gas throughput monthly and annually.

5.1.2.4 Testing

Testing is not required so long as pipeline quality natural gas is combusted in the turbines.

5.1.2.5 Recordkeeping

The permittee is required to record the natural gas throughput monthly and annually. In addition, the permittee is required to maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.07.a and b. The permittee is also required to retain records of all monitoring and other requirements in the Tier I OP for the most recent five-year period.

5.1.2.6 Reporting

Pursuant to IDAPA 58.01.01.322.08, the permittee is required to conduct sufficient reporting to assure compliance with all the terms and conditions of the Tier I OP. Submittal of such reports for any required monitoring is required at least every six months beginning six months after issuance of the Tier I OP and every six months thereafter. All reports must be certified in accordance with IDAPA 58.01.01.123.

Permit deviations including, but not limited to, excess emissions must be reported promptly by the permittee. If the deviation is an excess emission, the report must be submitted in accordance with the requirements of Sections 130-136. For all other deviations, the permittee is required to submit reports at least every six months. All instances of deviations from Tier I OP requirements which include monitoring, recordkeeping, and reporting must be clearly identified. The report must describe the probable cause of such deviations and any corrective actions or preventative measures taken. All reports are required to be certified in accordance with IDAPA 58.01.01.123.

5.1.3 Permit Requirement - FUEL BURNING EQUIPMENT - [IDAPA 58.01.01.675]

5.1.3.1 Applicability

Unit 4B and Unit 4C are subject to the fuel-burning equipment grain-loading standard for the combustion of gas in accordance with IDAPA 58.01.01.675.

For any alternative operating scenario, the fuel-burning equipment grain-loading standard applies.

5.1.3.2 Compliance Demonstration Method

With the combustion of natural gas in these emissions units, historical source test data shows that grain-loading in the exhaust gas averages roughly two orders of magnitude less than the applicable standard (0.015 gr/dscf @ 3% oxygen). Because this data shows that the standard will never be violated, compliance is demonstrated by requiring the exclusive use of natural gas in the turbines. In order to make this requirement enforceable, the permittee is required to monitor and record the amount of natural gas combusted in the turbines.

5.1.3.3 Monitoring

The permittee is required to monitor the natural gas throughput monthly and annually.

5.1.3.4 Testing

Testing is not required so long as pipeline quality natural gas is combusted in the turbines.

5.1.3.5 Recordkeeping

The permittee is required to record the natural gas throughput monthly and annually. In addition, the permittee is required to maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.07.a and b. The permittee is required to retain records of all monitoring and other requirements in the Tier I OP for the most recent five-year period.

5.1.3.6 Reporting

Pursuant to IDAPA 58.01.01.322.08, the permittee is required to conduct sufficient reporting to assure compliance with all the terms and conditions of the Tier I OP. Submittal of such reports for any required monitoring is required at least every six months beginning six months after issuance of the Tier I OP and every six months thereafter. All reports must be certified in accordance with IDAPA 58.01.01.123.

Permit deviations including, but not limited to, excess emissions must be reported promptly by the permittee. If the deviation is an excess emission, the report must be submitted in accordance with the requirements of Sections 130-136. For all other deviations, the permittee is required to submit reports at least every six months. All instances of deviations from Tier I OP requirements which include monitoring, recordkeeping, and reporting must be clearly identified. The report must describe the probable cause of such deviations and any corrective actions or preventative measures taken. All reports are required to be certified in accordance with IDAPA 58.01.01.123.

5.1.4 Permit Requirement - NO_x STD - UNIT 4B - [40 CFR 60.332(a)(2)][PTC #017-00037]

5.1.4.1 Applicability

Stationary gas turbines with manufacturer's rated base load at ISO conditions of 30 megawatts (MW) or less are affected facilities in accordance with 40 CFR 60.332(d) and are subject to the standard for NO_x emissions in accordance with 40 CFR 60.332(a)(2).

The following calculation shows that Unit 4B's rated base load at ISO conditions is less than 30 MW:

$$(15,000 \text{ hp (ISO)}) (0.746 \text{ kW/hp}) (1 \text{ MW}/1,000 \text{ kW}) = 11.19 \text{ MW.}$$

Unit 4B is therefore subject to the standard for NO_x emissions as determined using the equation found at 40 CFR 60.332(a)(2):

$$\text{STD} = 0.0150 * (14.4)/Y + F$$

Where: STD = Allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = Manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour).
The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel burned nitrogen. F = 0 for pipeline quality fuel.

Calculating for Y:

$$Y = ((103\text{E}6 \text{ Btu/hr}) / (15,000 \text{ hp})) (1 \text{ J}/9.5\text{E-}04 \text{ Btu}) (1 \text{ hp}/746 \text{ W}) (1\text{kJ}/1,000 \text{ J}) = 9.69 \text{ kJ/W-hr}$$

Thus:

$$\text{STD} = 0.0150 * (14.4)/9.69 + 0 = 0.0223\% = 223 \text{ ppmvd.}$$

5.1.4.2 Compliance Demonstration Method

NO_x emissions from Unit 4B cannot exceed 223 parts per million by volume on a dry basis (ppmvd) corrected to 15% oxygen. In order to demonstrate compliance with STD, a source test is required one time per calendar year unless the results from the first source test or two subsequent source tests are less than 90% of STD, in which case no further testing is required on Unit 4B during the permit term.

For any alternative operating scenario, NO_x emissions cannot exceed STD corrected to 15% oxygen as determined by 40 CFR 60.332(a)(2). An initial source test is required within 180 days after start-up to demonstrate STD compliance. Additional source testing is required one time per permit term unless the results from the first source test or two subsequent source test are less than 90% of the NO_x emission limit for the replacement turbine, in which case no further testing is required on the replacement turbine during the permit term.

5.1.4.3 Monitoring

The permittee is required to monitor the NO_x STD during each source test. Per the May 8, 1996 custom fuel monitoring schedule approved by EPA Region X, nitrogen monitoring is waived for pipeline quality natural gas. The monitoring schedule is contingent upon the use of pipeline quality natural gas.

5.1.4.4 Testing

All source testing is to be conducted in accordance with 40 CFR 60.8, 40 CFR 60.335, and IDAPA 58.01.01.157.

5.1.4.5 Recordkeeping

The permittee is required to record the NO_x STD during each source test, maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.07.a and b, and retain records of all monitoring and other requirements in the Tier I OP for the most recent five-year period.

5.1.4.6 Reporting

Pursuant to IDAPA 58.01.01.322.08, the permittee is required to conduct sufficient reporting to assure compliance with all the terms and conditions of the Tier I OP. Submittal of such reports for any required monitoring is required at least every six months beginning six months after issuance of the Tier I OP and every six months thereafter. All reports must be certified in accordance with IDAPA 58.01.01.123.

Permit deviations including, but not limited to, excess emissions must be reported promptly by the permittee. If the deviation is an excess emission, the report must be submitted in accordance with the requirements of Sections 130-136. For all other deviations, the permittee is required to submit reports at least every six months. All instances of deviations from Tier I OP requirements which include monitoring, recordkeeping, and reporting must be clearly identified. The report must describe the probable cause of such deviations and any corrective actions or preventative measures taken. All reports are required to be certified in accordance with IDAPA 58.01.01.123.

5.1.5 Permit Requirement - NO_x STD - UNIT 4C - [40 CFR 60.332(a)(2)][PTC #017-00037]

5.1.5.1 Applicability

In accordance with 40 CFR 60.332(c), stationary gas turbines with a heat input peak load equal to or greater than 10.7 gigajoules per hour (10 million Btu/hr) but less than or equal to 107.2 gigajoules per hour (100 million Btu/hr), based on the lower heating value of the fuel fired, are subject to the standard for NO_x emissions in accordance with 40 CFR 60.332(a)(2). The heat input peak load for Unit 4C is 98 million Btu/hr; therefore, it is an affected facility in accordance with 40 CFR 60.332(c) and subject to the NO_x STD in accordance with 40 CFR 60.332(a)(2).

$$\text{STD} = 0.0150 * (14.4)/Y + F$$

Where: STD = Allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = Manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour).
The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel burned nitrogen.

F = 0 for pipeline quality fuel.

Calculating for Y:

$$Y = ((98\text{E}6 \text{ Btu/hr})/(14,100 \text{ hp}))(1 \text{ J}/9.5\text{E-}04 \text{ Btu}) \\ (1 \text{ hp}/746 \text{ W})(1\text{kJ}/1,000 \text{ J}) = 9.81 \text{ kJ/W-hr}$$

Thus:

$$\text{STD} = 0.0150 * (14.4)/9.81 + 0 = 0.0220\% = 220 \text{ ppmvd.}$$

5.1.5.2 Compliance Demonstration Method

NO_x emissions from Unit 4C cannot exceed 220 ppmvd corrected to 15% oxygen. In order to demonstrate compliance with STD, a source test is required one time per calendar year unless the results from the first source test or two subsequent source tests are less than 90% of STD, in which case no further testing is required on Unit 4C during the permit term.

For any alternative operating scenario, NO_x emissions cannot exceed STD corrected to 15% oxygen as determined by 40 CFR 60.332(a)(2). An initial source test is required within 180 days after start-up to demonstrate STD compliance. Additional source testing is required one time per permit term unless the results from the first source test or two subsequent source test are less than 90% of the NO_x emission limit for the replacement turbine, in which case no further testing is required on the replacement turbine during the permit term.

5.1.5.3 Monitoring

The permittee is required to monitor the NO_x STD during each source test. Per the May 8, 1996 custom fuel monitoring schedule approved by EPA Region X, nitrogen monitoring is waived for pipeline quality natural gas. The monitoring schedule is contingent upon the use of pipeline quality natural gas.

5.1.5.4 Testing

All source testing is to be conducted in accordance with 40 CFR 60.8, 40 CFR 60.335, and IDAPA 58.01.01.157.

5.1.5.5 Recordkeeping

The permittee is required to record the NO_x STD during each source test, maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.07.a and b, and retain records of all monitoring and other requirements in the Tier I OP for the most recent five-year period.

5.1.5.6 Reporting

Pursuant to IDAPA 58.01.01.322.08, the permittee is required to conduct sufficient reporting to assure compliance with all the terms and conditions of the Tier I OP. Submittal of such reports for any required monitoring is required at least every six months beginning six months after issuance of the Tier I OP and every six months thereafter. All reports must be certified in accordance with IDAPA 58.01.01.123.

Permit deviations including, but not limited to, excess emissions must be reported promptly by the permittee. If the deviation is an excess emission, the report must be submitted in accordance with the requirements of Sections 130-136. For all other deviations, the permittee is required to submit reports at least every six months. All instances of deviations from Tier I OP requirements which include monitoring, recordkeeping, and reporting must be clearly identified. The report must describe the probable cause of such deviations and any corrective actions or preventative measures taken. All reports are required to be certified in accordance with IDAPA 58.01.01.123.

5.1.6 Permit Requirement-STANDARD FOR SULFUR DIOXIDE - [40 CFR 60.333(b)][PTC#017-00037]

5.1.6.1 Applicability

The permittee cannot burn any fuel which contains sulfur in excess of 0.8 percent by weight in any stationary gas-fired turbine in accordance with 40 CFR 60.333(b) and PTC #017-00037 (October 22, 1999).

5.1.6.2 Compliance Demonstration Method

Compliance is demonstrated by combusting pipeline quality natural gas.

5.1.6.3 Monitoring

The Permittee is required to monitor and record the sulfur content of the fuel being fired in the gas turbines in accordance with the approved custom fuel monitoring schedule granted to the Permittee by the Environmental Protection Agency (EPA). A copy of the semi-annual report required by EPA shall also be sent to the DEQ to demonstrate compliance with 40 CFR 60.333(b).

5.1.6.4 Testing

The permittee is required to analyze the fuel sulfur content in accordance with the May 8, 1996 custom fuel compliance monitoring schedule and the most recent revision to the custom fuel monitoring schedule approved by EPA Region X. The monitoring schedule is contingent upon the use of pipeline quality natural gas.

5.1.6.5 Recordkeeping

The permittee is required to maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.07.a and b, and to retain records of all monitoring and other requirements in the Tier I OP for the most recent five-year period.

5.1.6.6 Reporting

Pursuant to IDAPA 58.01.01.322.08, the permittee is required to conduct sufficient reporting to assure compliance with all the terms and conditions of the Tier I OP. Submittal of such reports for any required monitoring is required at least every six months beginning six months after issuance of the Tier I OP and every six months thereafter. All reports must be certified in accordance with IDAPA 58.01.01.123.

Permit deviations including, but not limited to, excess emissions must be reported promptly by the permittee. If the deviation is an excess emission, the report must be submitted in accordance with the requirements of Sections 130-136. For all other deviations, the permittee is required to submit reports at least every six months. All instances of deviations from Tier I OP requirements which include monitoring, recordkeeping, and reporting must be clearly identified. The report must describe the probable cause of such deviations and any corrective actions or preventative measures taken. All reports are required to be certified in accordance with IDAPA 58.01.01.123.

5.1.7 Permit Requirement - FUEL THROUGHPUT LIMIT, UNIT 4B - [PTC #017-00037]

5.1.7.1 Applicability

Per PTC #017-00037 (October 22, 1999), the maximum amount of natural gas that can be combusted in Unit 4B is 1,110,000,000 standard cubic feet per any connective 12-month period (1,110 MMscf/yr). Fuel throughput is limited in order to limit the quantity of air pollutants emitted to the atmosphere.

5.1.7.2 Compliance Demonstration Method

Monitor and record fuel throughput.

5.1.7.3 Monitoring

The permittee is required to monitor the fuel throughput monthly and annually.

5.1.7.4 Testing

Testing is not required to demonstrate compliance with the fuel throughput limit.

5.1.7.5 Recordkeeping

The permittee is required to record the fuel throughput monthly and annually, maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.07.a and b, and retain records of all monitoring and other requirements in the Tier I OP for the most recent five-year period.

5.1.7.6 Reporting

Pursuant to IDAPA 58.01.01.322.08, the permittee is required to conduct sufficient reporting to assure compliance with all the terms and conditions of the Tier I OP. Submittal of such reports for any required monitoring is required at least every six months beginning six months after issuance of the Tier I OP and every six months thereafter. All reports must be certified in accordance with IDAPA 58.01.01.123.

Permit deviations including, but not limited to, excess emissions must be reported promptly by the permittee. If the deviation is an excess emission, the report must be submitted in accordance with the requirements of Sections 130-136. For all other deviations, the permittee is required to submit reports at least every six months. All instances of deviations from Tier I OP requirements which include monitoring, recordkeeping, and reporting must be clearly identified. The report must describe the probable cause of such deviations and any corrective actions or preventative measures taken. All reports are required to be certified in accordance with IDAPA 58.01.01.123.

5.1.8 Permit Requirement - FUEL THROUGHPUT LIMIT, UNIT 4C - [PTC #017-00037]

5.1.8.1 Applicability

Per PTC #017-00037 (October 22, 1999), the maximum amount of natural gas that can be combusted in Unit 4C is 963,600,000 standard cubic feet per any connective twelve-month period (963.6 MMscf/yr). Fuel throughput is limited in order to limit the quantity of air pollutants emitted to the atmosphere.

5.1.8.2 Compliance Demonstration Method

Monitor and record fuel throughput.

5.1.8.3 Monitoring

The permittee is required to monitor the fuel throughput monthly and annually.

5.1.8.4 Testing

Testing is not required to demonstrate compliance with the fuel throughput limit.

5.1.8.5 Recordkeeping

The permittee is required to record the fuel throughput monthly and annually, maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.07.a and b, and retain records of all monitoring and other requirements in the Tier I OP for the most recent five-year period.

5.1.8.6 Reporting

Pursuant to IDAPA 58.01.01.322.08, the permittee is required to conduct sufficient reporting to assure compliance with all the terms and conditions of the Tier I OP. Submittal of such reports for any required monitoring is required at least every six months beginning six months after issuance of the Tier I OP and every six months thereafter. All reports must be certified in accordance with IDAPA 58.01.01.123.

Permit deviations including, but not limited to, excess emissions must be reported promptly by the permittee. If the deviation is an excess emission, the report must be submitted in accordance with the requirements of Sections 130-136. For all other deviations, the permittee is required to submit reports at least every six months. All instances of deviations from Tier I OP requirements which include monitoring, recordkeeping, and reporting must be clearly identified. The report must describe the probable cause of such deviations and any corrective actions or preventative measures taken. All reports are required to be certified in accordance with IDAPA 58.01.01.123.

5.1.9 Permit Requirement - ANNUAL NO_x EMISSION RATE LIMIT - UNIT 4B - [PTC #017-00037]

5.1.9.1 Applicability

Per PTC #017-00037 (October 22, 1999), NO_x emissions from Unit 4B are limited to 73 tons per year (73 T/yr). Only NO_x is limited in the OP for Unit 4B. NO_x is limited because it is the pollutant emitted in the largest quantity. By complying with the emission rate limit set for NO_x, compliance with the emission rates for the other regulated air pollutants is inherently demonstrated.

5.1.9.2 Compliance Demonstration Method

In order to demonstrate compliance with the annual NO_x emission rate limit for Unit 4B, a source test is required one time per calendar year unless the results from the first source test or two subsequent source tests are less than 90% of the NO_x emission rate limit, in which case no further testing is required on Unit 4B during the permit term. Compliance or noncompliance with the annual NO_x emission rate limit is demonstrated by using the following equation:

$$(X_a \text{ lb/hr})(8,760 \text{ hr/yr})(1 \text{ T}/2000 \text{ lb}) = X \text{ T/yr}$$

Where: X_a = average pound-per-hour NO_x emission rate at full-load operating conditions measured during source testing.

For any alternative operating scenario, NO_x emissions from the replacement turbine cannot exceed 73 T/yr. An initial source test is required within 180 days after start-up. Additional source testing is required one time per permit term unless the results from the first source test or two subsequent source test are less than 90% of the NO_x emission limit for the replacement turbine, in which case no further testing is required on the replacement turbine during the permit term. Compliance or non-compliance with the annual NO_x emission rate limit is demonstrated by using the following equation:

$$(X_a \text{ lb/hr})(8,760 \text{ hr/yr})(1 \text{ T}/2000 \text{ lb}) = X \text{ T/yr}$$

Where: X_a = average pound-per-hour NO_x emission rate at full-load operating conditions measured during source testing.

5.1.9.3 Monitoring

The permittee is required to monitor the pound-per-hour NO_x emission rate for each source test.

5.1.9.4 Testing**5.1.9.5 Recordkeeping**

The permittee is required to record the pound-per-hour NO_x emission rate for each source test, maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.07.a and b, and retain records of all monitoring and other requirements in the Tier I OP for the most recent five-year period.

5.1.9.6 Reporting

Pursuant to IDAPA 58.01.01.322.08, the permittee is required to conduct sufficient reporting to assure compliance with all the terms and conditions of the Tier I OP. Submittal of such reports for any required monitoring is required at least every six months beginning six months after issuance of the Tier I OP and every six months thereafter. All reports must be certified in accordance with IDAPA 58.01.01.123.

Permit deviations including, but not limited to, excess emissions must be reported promptly by the permittee. If the deviation is an excess emission, the report must be submitted in accordance with the requirements of Sections 130-136. For all other deviations, the permittee is required to submit reports at least every six months. All instances of deviations from Tier I OP requirements which include monitoring, recordkeeping, and reporting must be clearly identified. The report must describe the probable cause of such deviations and any corrective actions or preventative measures taken. All reports are required to be certified in accordance with IDAPA 58.01.01.123.

5.1.10 Permit Requirement - ANNUAL NO_x EMISSION RATE LIMIT - UNIT 4C - [PTC #017-00037]**5.1.10.1 Applicability**

Per PTC #017-00037 (October 22, 1999), NO_x emissions from Unit 4C are limited 352 tons per year (352 T/yr). Only NO_x is limited in the OP for Unit 4C. NO_x is limited because it is the pollutant emitted in the largest quantity. By complying with the emission rate limit set for NO_x, compliance with the emission rates for the other regulated air pollutants is inherently demonstrated.

5.1.10.2 Compliance Demonstration Method

In order to demonstrate compliance with the annual NO_x emission rate limit for Unit 4C, a source test is required one time per calendar year unless the results from the first source test or two subsequent source tests are less than 90% of the NO_x emission rate limit, in which case no further testing is required on Unit 4C during the permit term. Compliance or noncompliance with the annual NO_x emission rate limit is demonstrated by using the following equation:

$$(X_a \text{ lb/hr})(8,760 \text{ hr/yr})(1 \text{ T}/2000 \text{ lb}) = X \text{ T/yr}$$

Where: X_a = average pound-per-hour NO_x emission rate at full-load operating conditions measured during source testing.

For any alternative operating scenario, NO_x emissions from the replacement turbine cannot exceed 352 T/yr. An initial source test is required to be conducted within 180 days after startup. Additional source testing is required one time per permit term unless the results from the first source test or two subsequent source test are less than 90% of the NO_x emission limit for the replacement turbine, in which case no further testing is required on the replacement turbine during the permit term. Compliance or noncompliance with the annual NO_x emission rate limit is demonstrated by using the following equation:

$$(X_e \text{ lb/hr})(8,760 \text{ hr/yr})(1 \text{ T}/2000 \text{ lb}) = X \text{ T/yr}$$

Where: X_e = average pound-per-hour NO_x emission rate at full-load operating conditions measured during source testing.

5.1.10.3 Monitoring

The permittee is required to monitor the pound-per-hour NO_x emission rate for each source test.

5.1.10.4 Testing

All source testing is to be conducted in accordance with 40 CFR 60.8, 40 CFR 60.335, and IDAPA 58.01.01.157.

5.1.10.5 Recordkeeping

The permittee is required to record the pound-per-hour NO_x emission rate for each source test, maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.07.a and b, and retain records of all monitoring and other requirements in the Tier I OP for the most recent five-year period.

5.1.10.6 Reporting

Pursuant to IDAPA 58.01.01.322.08, the permittee is required to conduct sufficient reporting to assure compliance with all the terms and conditions of the Tier I OP. Submittal of such reports for any required monitoring is required at least every six months beginning six months after issuance of the Tier I OP and every six months thereafter. All reports must be certified in accordance with IDAPA 58.01.01.123.

Permit deviations including, but not limited to, excess emissions must be reported promptly by the permittee. If the deviation is an excess emission, the report must be submitted in accordance with the requirements of Sections 130-136. For all other deviations, the permittee is required to submit reports at least every six months. All instances of deviations from Tier I OP requirements which include monitoring, recordkeeping, and reporting must be clearly identified. The report must describe the probable cause of such deviations and any corrective actions or preventative measures taken. All reports are required to be certified in accordance with IDAPA 58.01.01.123.

5.2 AFS/Data Management

AIRS Point No. 010	SCC # 20300202	Natural Gas Turbine
AIRS Point No. 020	SCC # 20300202	Natural Gas Turbine

6. INSIGNIFICANT ACTIVITIES

The following emissions units and activities have been identified as insignificant activities in accordance with IDAPA 58.01.01.317:

6.1. Natural Gas-Fired Boilers - IDAPA 58.01.01.317.01.b.i.(5)

This facility includes two natural gas-fired boilers used exclusively for space heating. Each boiler has a maximum rated heat input capacity of 860,000 Btu/hour. Emissions from both boilers are exhausted through a common stack. In accordance with IDAPA 58.01.01.317.01.b.i.(5), a combustion source, less than five million (5,000,000) Btu/hr, exclusively using natural gas, butane, propane, and/or LPG is identified as an insignificant activity for the purposes of the Tier I OP program. Insignificant activities are not specifically regulated in the Tier I OP drafted for this facility. Rather, they are subject to generally applicable permit requirements.

6.2. Emergency Generator - IDAPA 58.01.01.317.01.b.i.(5)

This facility includes one natural gas-fired emergency generator used for backup power in the event of a power failure. The generator's maximum heat input capacity is rated at 1,300,000 Btu/hr. In accordance with IDAPA 58.01.01.317.01.b.i.(5), a combustion source, less than 5,000,000 Btu/hr, exclusively using natural gas, butane, propane, and/or LPG is identified as an insignificant activity for the purposes of the Tier I OP program. Insignificant activities are not specifically regulated in the Tier I OP drafted for this facility. Rather, they are subject to generally applicable permit requirements.

6.3. Lubricating Oil System - IDAPA 58.01.01.317.01.a.i.(4)

The lubricating system primarily provides lubricating and cooling oil for the engine, gears and bearings. It also supplies oil to the hydraulic, servo and drive equipment. The components of a typical Solar Mars lube oil system include: the oil tank assembly, level/pressure alarm and shutdown switches, heaters and temperature sensors, main lube oil pump, auxiliary (pre/post) lube oil pumps, oil mist separator, control valves, check valves, relief valves and the various gages. In accordance with IDAPA 58.01.01.317.01.a.i.(4), storage tanks, reservoirs and pumping and handling equipment of any size, limited to soaps, lubricants, lubricating oil, treater oil, hydraulic fluid, vegetable oil, grease, animal fat, aqueous salt solutions or other materials and processes using appropriate lids and covers where there is no generations of objectionable odor or airborne particulate matter are identified as an insignificant activity for the purposes of the Tier I OP program. Insignificant activities are not specifically regulated in the Tier I OP drafted for this facility. Rather, they are subject to generally applicable permit requirements.

6.4. Natural Gas Pipeline and Fuel System - IDAPA 58.01.01.317.01.b.i.(30)

Natural gas contains some nonmethane hydrocarbons. Both methane (methane and ethane) and VOCs would be emitted to the atmosphere from leaking valves, flanges, and pressure relief valves. The flanges, valves, and pressure relief valves that comprise the natural gas conveyance system in the pipe yard, as well as the fuel gas system, are sources of methane/ethane and fugitive VOC emissions. Natural gas is vented to the atmosphere during the turbine startup and shutdown procedure. Natural gas is used to spin up the turbines and is then vented to the atmosphere. When a turbine is shut down, the natural gas in the compressor and the length of pipe between the bypass valves (located in the valve skid) and the compressor is vented to the atmosphere (referred to as blowdown). The piping used to convey natural gas to and from the compressors includes valves, flanges, compressor seals, and pressure relief valves. A separate system brings fuel gas to the turbines and other natural gas combustion equipment.

In accordance with IDAPA 58.01.01.317.01.b.i.(30), an emission unit or activity with emissions less than or equal to ten percent of the levels contained in Section 006 of the definition of significant and no more than one ton per year of any HAP is identified as an insignificant activity for the purposes of the Tier I OP program. Insignificant activities are not specifically regulated in the Tier I OP drafted for this facility. Rather, they are subject to generally applicable permit requirements.

6.5. Fugitive Dust Emissions - IDAPA 58.01.01.317.01.a.i.(30)

Maintenance of paved streets and parking lots including paving, stripping, salting, sanding, cleaning and sweeping of streets and paved surfaces. Provided these activities are not related to the sources primary business activity, do not otherwise trigger a permit modification, and fugitive emissions are reasonably controlled as required by Section 651-651, these activities are identified as an insignificant activity for the purposes of the Tier I OP program. Insignificant activities are not specifically regulated in the Tier I OP drafted for this facility. Rather, they are subject to generally applicable permit requirements.

7. COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION

7.1 Compliance Plan

PG&E GT-NW is required to submit a compliance plan indicating each emissions unit complies, and will continue to comply, with the terms and conditions of IDAPA 58.01.01.314.10. In addition, if there are additional terms or conditions applicable to the source, PG&E GT-NW will meet the terms and conditions on a timely basis as required by DEQ. Furthermore, PG&E GT-NW must submit a compliance schedule if the emissions unit is not in compliance.

7.2. Compliance Certification

PG&E GT-NW is required to submit a periodic compliance certification for each emissions unit in the form of an annual report to DEQ and EPA within 30 days after the end of each calendar year. In accordance with IDAPA 58.01.01.322.11, PG&E GT-NW must certify compliance with all terms and conditions of the permit including, but not limited to, the NO_x STD for each turbine, and natural gas throughput for each turbine.

7.3. Compliance Inspection

The facility may be inspected at least annually by DEQ. Copies of the annual inspection reports are located in the facility's source file at DEQ's office in Boise, Idaho.

8. REGISTRATION FEES

The emissions fees for the permitted sources will be determined according to IDAPA 58.01.01.525-538.

9. AIRS FACILITY SUBSYSTEM

The AIRS/AFS Facility-wide Classification Data Entry Form for this facility is presented as Appendix B of this document.

AIRS Point No. 010	SCC # 20200201	Natural Gas Turbine
AIRS Point No. 020	SCC # 20200201	Natural Gas Turbine

10. RECOMMENDATION

Based on review of the Tier I OP application and all applicable state and federal rules and regulations, Department staff recommends that PG&E Gas Transmission - Northwest be issued Tier I OP No. 017-00037 for their Samuels, Idaho natural gas compressor station.

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Attachments

cc: Gwen Fransen, Coeur d'Alene Regional Office
Marilyn Seymore, DEQ State Office
Laurie Kral, EPA Region X
Carole Zundel, Technical Services
William Rogers, Technical Services
Pat Rayne, Technical Services
Source File
Final Issuance Binder

May 30, 2001

**STATE OF IDAHO
DEPARTMENT OF ENVIRONMENTAL QUALITY
RESPONSE TO PUBLIC COMMENTS
DRAFT AIR QUALITY TIER I OPERATING PERMIT
PG&E GAS TRANSMISSION - NORTHWEST, SAMUELS IDAHO COMPRESSOR STATION**

Introduction

As required by IDAPA 58.01.01.364 (*Rules for the Control of Air Pollution in Idaho*), the Idaho Department of Environmental Quality (DEQ) provided for public notice and comment, including offering an opportunity for a hearing, a Tier I operating permit drafted for PG&E Gas Transmission – Northwest's (PG&E GT-NW), Samuels, Idaho natural gas compressor station (Station #4). Public comment packages, which included the application materials, and draft permit and technical memorandum, were made available for public review at the East Bonner County Public Library in Sandpoint, DEQ's Coeur d'Alene Regional Office, and DEQ's State Office in Boise. The public comment period was provided from December 27, 2000 through January 26, 2001. PG&E GT-NW provided the only public comments regarding the air quality aspects of the draft permit. Those comments are provided below with DEQ's response immediately following. No entity requested an opportunity for a hearing.

Public Comments and DEQ Responses

Comment 1: **Quarterly Inspections for Fugitive and Visible Emissions**

The draft Tier I Operating Permit requires GTN [PG&E GT-NW] to conduct quarterly facility-wide fugitive dust and visible emissions inspections (Facility-wide Conditions A.4 and A.8). These inspection requirements are monitoring and recordkeeping conditions to demonstrate the reasonable control of fugitive dusts and compliance with the visible emissions standard.

GTN is required to fire its units with natural gas exclusively (Conditions B.3 and C.3). Additionally, GTN is required to maintain records of all fugitive dust complaints received and to take the appropriate corrective action necessary to control fugitive dust emissions. These fuel and recordkeeping requirements are adequate to effectively control and monitor the emissions of fugitive dust and visible emissions; therefore, no further controls are necessary. The quarterly inspection requirements included in the draft permit conditions A.4 and A.8 place an unnecessary burden on GTN; therefore, GTN requests they be removed.

Response to 1:

The U.S. Environmental Protection Agency (EPA) Region X had considerable input into the development of the Facility-wide for Idaho's Tier I Operating Permits. According to EPA, facility-wide inspections of all fugitive and visible emissions sources are required in order to demonstrate compliance with IDAPA 58.01.01.650 and 625, respectively. The inspections do not have to be conducted in accordance with standard EPA reference methods; rather, they are simply walk-around inspections for the purpose of identifying any fugitive or visible emissions problem.

DEQ is only requiring these inspections be done quarterly by PG&E GT-NW. All Title V facilities operating in Idaho are required to conduct the facility-wide inspections, some on a more frequent basis than quarterly. For these reasons, DEQ does not feel these requirements are burdensome to PG&E GT-NW, and therefore, the request to remove the requirements is denied.

Comment 2:

Like-Engine Exchange Initial Performance Test

In order to provide reliable supply of natural gas to customers, GTN maintains an inventory of like-engines to replace units removed for repair or service. Turbines removed from service are typically replaced with a like-engine and returned to the manufacturer or overhaul facility for service. Upon completion of the service, the units are tested at the manufacturer or repair facility's location to demonstrate the unit meets the manufacturer's performance acceptance criteria (emissions, delivered horsepower, etc.) prior to being delivered to GTN for inventory replacement or installation.

Following the installation of a like-engine replacement, the draft Tier I Operating Permit requires GTN to conduct an initial performance test (Unit Specific Conditions B.11 and C.11) to measure oxides of nitrogen (NO_x). The initial performance test must be conducted in accordance with the test methods and procedures in 40 CFR 60.8, 40 CFR 60.335, IDAPA 58.01.01.157, and Condition A.15 of the permit. Performance source tests typically cost GTN between \$6,000 to \$10,000 for mobilization, source testing, and reporting. Additionally, source tests are performed once per year, unless the unit's emissions are less than 90% of the permitted limit. The requirement to perform an additional source test on a functionally equivalent unit places an unnecessary economic burden on GTN. GTN requests that the manufacturer's or repair facility's performance acceptance test be an acceptable alternative to the initial performance test required in draft permit conditions B.11 and C.11. A copy of a manufacturer's performance acceptance test is attached.

Response to 2:

Conditions B.11 and C.11 are designed to allow Station #4 the flexibility to install either a like- or unlike-replacement turbine provided the replacement turbine does not exceed the operating parameters listed in Conditions B.11 and C.11. An initial performance test of the replacement turbine is required to assure compliance with the terms and conditions of the operating permit. The submitted performance acceptance test does not appear to have been conducted using the test methods and procedures contained in 40 CFR 60.335 to measure emissions. Unless EPA and DEQ approve an alternative performance test method, DEQ cannot accept the submitted performance acceptance test in lieu of a standard EPA reference method.

It is not DEQ's intention to require that PG&E Gas Transmission-NW conduct an additional performance test during the calendar year the replacement turbine is put into service. This is provided the replacement turbine demonstrates compliance with the terms and conditions of the Tier I operating permit during the initial performance test. In order to clarify this requirement, the language of Conditions B.11 and C.11 has been amended as follows:

"If a replacement turbine is installed, the Permittee shall conduct an initial performance test to measure oxides of nitrogen emissions in accordance with the test methods and procedures in 40 CFR 60.8, 40 CFR 60.335, IDAPA 58.01.01.157, and Condition A.15 of this permit. Provided the replacement turbine demonstrates compliance with terms and conditions of this permit during the initial performance test, an additional performance test is not required during the calendar year the replacement turbine is put into service"

Please note, this response is not a substantive change to the draft Tier I operating permit that would necessitate another public notice and comment period.

Comment 3: **Emergency Generator Location**

The draft Tier I Operating Permit lists the activities, emission units, and locations in section D of the permit. The location of the emergency generator is incorrect. The correct location for the emergency generator is the maintenance building.

Response to 3: The draft Tier I operating permit has been amended to reflect this comment.

APPENDIX B

AIRS/AFS Data Entry Form

*PG&E Gas Transmission – Northwest
Natural Gas Compressor Station #4*

*P-9505-051-1
Tier I Operating Permit*

May, 2001

AIRS/AFS FACILITY-WIDE CLASSIFICATION DATA ENTRY FORM

FACILITY NAME: PG&E Gas Transmission - Northwest

AIRS NUMBER: 017-00037

DATE: May 30, 2001

Air Program Description	SP	PSM	NESHAP	NSR	DUST	TITLE V	AFS CLASSIFICATION
SO ₂	B	B		B		B	AA, UA
NO _x	A	A		A		A	AA, UA
CO	A	B				A	AA, UA
PM-10	B	B				B	AA, UA
PT (Particulate)	B	B				B	AA, UA
VOC	B	B				B	AA, UA
THAP (Total HAPs)	B	B				B	AA, UA
Other (Specify Below)							
(Add additional lines if necessary.)							
VE/FE/FD	NC	NC	NC	NC	NC	NC	

*VE/FE/FD (VISIBLE EMISSIONS, FUGITIVE EMISSIONS, AND FUGITIVE DUST) ARE ENTERED FOR COMPLIANCE PURPOSES ONLY AND DO NOT REQUIRE EVALUATION BY THE PERMIT ENGINEER.